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Quality Management in Reference with ISO 9000 in Construction Business

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Abstract: **As production projects get bigger and more complex, customers are an increasing number of annoying higher stages of high-quality, performance, and delivery. Total Quality Management (TQM) has long been diagnosed as a successful control philosophy within the manufacturing and provider industries. TQM can also be embraced inside the production enterprise to assist improve best and productivity. This record attempts to introduce the fundamental factors of ISO 9000 and describes how every can be applied in a big selection of construction-related agencies, in order to acquire their aim of general first-class. Numerous case studies had been observed which show the capability of ISO 9000 to improve a employer's excellent overall performance, keep away from pricey errors, and produce happy clients. For the motive of this file, case research are mentioned showing how creation groups can efficaciously put in force TQM. The benefits experienced encompass discount in satisfactory prices, better employee process satisfaction due to the fact they do now not want to take care of defects and consumer lawsuits, recognition with the aid of customers, paintings completed efficaciously proper from the start, subcontractors with proper high-quality management systems, and nearer relationships with subcontractors and suppliers. TQM performance measures were additionally reflected via pinnacle control dedication, patron involvement and pride, worker involvement and empowerment, patron–dealer relationships, and procedure improvement and management.**

Since beyond two a long time, ISO 9000 fashionable has proven its abilties to decrease cost, boom productiveness, and satisfy stakeholders (customers) within the groups. However, evidently among distinctive methods, satisfactory price analysis is an exquisite approach to signify how much ISO 9000 is able to improve effectively pleasant performance, and decrease expenses in the initiatives. Thus, the principle purpose of this study is to evaluate the effects of ISO 9000 implementation on excellent cost in creation tasks. For this goal, a literature assessment became performed to layout a dependent questionnaire in a pattern of the sixty seven respondents from ISO 9000:2008-licensed projects of huge-scale (AAA) production businesses. As a quantitative research, the inferential facts analysis used to check the hypotheses of this have a look at. Lastly, the effects reported that ISO 9000 standard significantly affects the reduction of quality cost within construction projects in India.

1. INTRODUCTION

During the last four decades, firms around the world have witnessed the emergence and diffusion of a series of non-technological innovations designed to improve management practices within organizations. One of these is quality management, which has unquestionably become of particular significance and prevalence in all activity sectors. Quality management involves the adoption of a philosophy that comprises a focus on customer sand the continuous improvement of production processes, as well as on the implementation of arrange of techniques and approaches, such as statistical process control(SPC), seven basic tools, quality function deployment(QFD),etc. The academic literature on quality management has provided considerable empirical evidence of the positive impact that the adoption of different quality management systems and models has had on various dimensions and measures of firm performance. Firms develop their ideas and practices of quality management within two main frame works on the one hand, the implementation of quality management systems, the best example of which may be the system based on ISO9000 quality standards series; and on the other, the scheme provided by excellence models, the most prevalent of which in Europe is the EFQM model. Another significant development in recent years is the expansion of flexible systems of work organization.

These systems comprise series of practices whose principal aim is to transfer high decision-making power to workers and foster their involvement in the activities of the company by means of (both ascending and descending) information exchange and communication between employer and employees. Together with this, workers must become more multi-skilled and capable of performing a greater number and wider variety of tasks; this al so requires that employees receive more information about the general operations frame work where by the firm carries out its activities. As a consequence, decisions are taken by those that detect problems and, therefore, have mover fined knowledge of their potential causes. This enables the firm to implement a faster response and to a vial of greater flexibility when dealing with unexpected circumstances. Moreover, as long as these practices are conceived as employee- centred, they may be expected to lead to increased motivation and job satisfaction and greater commitment to the employer. Practices commonly included in these systems are self-directed teams, problem-solving groups (such as quality circles) and information meetings among employers and employees. Their Positive effects on productivity and firm performance are reflected in the conclusions to many studies based on samples of firms from different sectors In despite of the significance acquired by quality management and flexible work practices, the relationship between the two has rarely been addressed in the research literature. Never the less, the scarce empirical evidence available suggests that these two innovations tend to be implemented jointly and that they could be part of a common approach to business management. The limitations of existing research under core

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the need for more focused analysis of the influence that quality management may have on the adoption of flexible work systems. This is of particular relevance in relation to ISO9000 and EFQM, whose relationship with innovative work practices has received little or no attention in empirical research terms.

The purpose of this paper is to explore the impact that these two approaches to quality management have on the incidence of flexible work systems. Furthermore, the intention is to evaluate the magnitude of the effects of these two systems one work practices. To this end, the information gathered through a survey carried out in a final valid sample of 665 Spanish business establishments with at least 20 employees from the manufacturing, building and service sectors is analysed. This paper contributes to the existing research literature in several ways. First and foremost, it provides additional evidence regarding the influence of quality management on human resources management and, more particularly, on the incidence of flexible work practices. Secondly, so far as we know, this is the first paper to consider the influence of the two approaches used by nearly all firms that decide to implement quality management in their activities, which enables us to explore whether or not the effects of both approaches on work organization are the same. Finally, the sample of companies analysed is not limited to a particular sector, which increases the significance of the conclusions reached, and may enable the application of such innovative practices to a larger number and wider variety of firms. The paper is structured as follows. The following section studies the implications of quality management for work organization from a theoretical perspective. Several hypotheses regarding the impact of ISO9000 and EFQM on the adoption of flexible work practices are then formulated. Section 3 describes the main characteristics of the data base used in the empirical analysis; the variables used in the estimations are defined and the methodology used to test such hypotheses explained. Section 4 sets out and discusses the results obtained in the estimations of the empirical models. Finally, the main conclusions are presented.

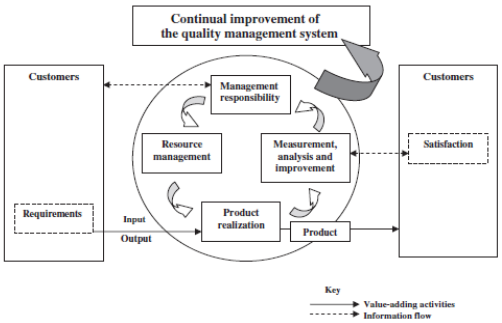

Figure No. 1 ISO Scheme 9000-2000

2. INTRODUCTION OF ISO 9000

ISO is the International Organization for Standardization, a worldwide federation of national standards bodies from 117 countries. ISO whose Central Secretariat located in Geneva of Switzerland, is a non-governmental organization established in 1947. ISO is not part of the United Nations Organization and its membership is not composed of government delegations, but is made of national standards institute or organizations one member organization per country. The Saudi Arabian Standards Organization (SASO) represents Saudi Arabia in ISO. It is to be noted that ISO is not a name or an acronym. It was derived from the Greek word ISO's which means equal, and is the root of the prefix iso-(e.g. isometric, equal dimensions). Hence, ISO was chosen as a name of the International Organization for Standardization as a reflection of its functions and because it is easy to follow.

2.1. Objectives of ISO

The objectives of the ISO are to develop world-wide standards to improve international communication and collaboration, and to promote the smooth and equitable growth of international trade. The output of ISO work is international technical agreements which are published as international standards. All of these international standards developed by ISO are voluntary, and ISO has no power to enforce their implementation in the member countries.

2.2. Evolution of ISO 9000 Standards

Since the Second World War, a trend has evolved which requires all material, methods, machines and manpower to be coordinated and checked to ensure they work together to provide customer satisfaction. This need was first formalized in the form of US Military standard MIL-Q-9858A as the first quality assurance standard issued in 1963. Although this old standard did not cover internal auditing, it contains most of the current elements of ISO 9000 standard. The MIL-Q-9858A standard was followed by many quality assurance standards issued by different countries until 1979 when the British standard BS 5750 was issued which became the basis for the birth of the international standard, ISO 9000, in 1987.

2.3. Structure of ISO 9000 Family of Standard

Currently the ISO 9000 family of standards (previously called series of standards in the 1987 first edition) consist of 17 standards. These are listed in attached table, ISO 9000 is not a single standard, it's a group or (family) of standards. ISO 9001, ISO9002 and ISO 9003 are used for contractual applications, i.e. supplier-customer business. Other standards in the ISO 9000 family are only guidelines, as their titles imply.

2.4. Certification to ISO 9000 Standard

As mentioned earlier, there are three standards among the ISO 9000 family of standards that are used for certification. These are ISO 9001, ISO 9002 and ISO 9003. Before starting to explain the certification to ISO 9000 standards, one should understand the differences between 'first party assessment', second party assessment' and ' third party assessment are as follows :

- First party assessment (also called self-assessment) is performed by an organization to evaluate the adequacy of its own quality system and compliance with a standard such as ISO 9001.

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- Second party assessment is performed by customers to examine the quality system of their suppliers. However, second party assessment is expensive and time consuming for both parties (customers and suppliers), and this is why third party assessment and certification systems have been developed in order to reduce the need for multiple assessments and to provide impartial expertise as and when needed.
- Third party assessment is conducted by a body which is not party to any contractual relationships between clients and suppliers.
- Other national companies are also planning to enter the quality systems certification arena.

2.5. ISO 9000 and TQM

Total Quality Management (TQM) is a company-wide effort that involves every person in an organization to improve performance. It penetrates to every aspect in the organization and puts quality as a fundamental objective. TQM philosophy which is based on management commitment, as the name implies, focuses on:

- Continuous process improvement and innovation
- Customer and suppliers (both internal and external) involvement
- Team work
- Education and training
- In an effort to achieve
- Customer satisfaction
- Cost effectiveness
- Defect-free work

ISO 9000 is a route to TQM, they are complementary to one another. For companies who are implementing TQM, installing ISO 9000 will be relatively straightforward. On the other hand, if a company is planning to implement TQM, it can use ISO 9000 as a vehicle. There is no contradiction between TQM and having a quality assurance system that is built to ISO 9000 standard. In fact, the two systems can be integrated to achieve the TQM and QA common goals. In addition, quality assurance provides measurement, which any TQM needs for monitoring continuous improvement.

2.6. ISO 9000 and the Construction Industry

Procurement of construction projects is not simple. The existence of legal contracts no guarantee that the client will ultimately be satisfied with the completed project. Even if after a problem occurs the owner (client) of a project eventually obtains compensation by arbitration and the client cannot obtain replacement. He is left with the patched-up original which will probably be a continuing source of irritation and unanticipated expense. Therefore, the client requires the contractor to have an in-house effective quality system that can give him the confidence or assurance that he will get a quality constructed facility on his land. This is what is called quality assurance system. Quality systems involve internal and external aspects. Internal quality systems cover activities aimed to provide confidence to the management of an organization that the intended quality is being achieved On the other hand; external quality system covers activities aimed to provide confidence to the client that the supplier's quality system will provide a product or services that will satisfy his quality requirement. This is called quality assurance systems. Contractor's quality assurance system is very important to the client, who will gain confidence that getting it right first time will be the contractor's norm.

2.7. Interpretation of ISO 9000 standard in the construction industry

As mentioned earlier, ISO 9001 is the most comprehensive standard among the ISO 9000 family of standard. Hence, in this section an interpretation of ISO 9001 clauses to the construction industry is presented. The standard consists of four main sections following the Introduction section, as follows:

- Scope and field of application
- References
- Definitions
- Quality system requirement

Section 4 addresses the twenty clauses of the quality system requirements. Therefore, the quality system requirements are numbered from clause 4.1 management responsibility up to clause 4.20 statistical techniques. Interpretation of these twenty clauses is in the attachment section. Each clause of the standard is discussed. First, the major requirements are listed. Then, details of specific requirement will be explained. The attached table lists the clauses of the standard and the specific requirements under the clauses that are discussed.

2.8. ISO 9000 In Construction Industry

Quality management systems have been of great interests which issued in 1999 in 150 countries including 343,643 certificates. Almost 56 percent of certificates have been issued for European companies. The second country in this respect is Australia and the third ones in Far East including China and Hong Kong. After reviewing ISO 9000 in 2000, this standard correspond more with construction industry, and its use in this industry has increased. The main motivator for certification should be the achievement of quality in a company's internal procedures in order to optimize resource and satisfy customers' requirements better. Most clients have their own needs and even many countries impose their own specific rules and instructions. Construction industry has its own proponents and opponents to apply ISO 9000. Proponents believe that it can be used in construction industry and has basic benefits. Chung believed that construction company's operations can be improved by the establishment of a quality system designed to standardize corporate procedures and can also be considered as an effective control mechanism that seeks to reduce waste and labour inefficiencies in a process, so that quality in the production and delivery process can be ensured. Opponents say that this standard with its own specific features and construction industry with its unique characteristic have no common fact. The generic nature of the standards often leads to differences in interpretations, and the implementation, use, and impact of ISO 9000 can vary among companies and

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countries. There are some specific conditions in this industry which limit the ISO 9000 operations. Besides above details there are some other features as follow.

- A construction project is usually a unique collection of people, equipment. And materials brought together at a unique location under unique weather conditions, while most manufacturing is a system of mass production where in all of these factors are consistent with producing typical producers over and over again.
- Performance testing in construction is generally not feasible as a basis for acceptance.
- It is common to have separate contractors for design and construction.
- It is not feasible to reject the whole constructed project after completion while attached to the purchaser's land.
- Decisions to reject a defective part of a constructed project need to be taken promptly before succeeding parts are constructed or installed.
- The number of parties involved in the constructed project's procurement is more than those involved in manufacturing procurement. Achieving quality construction requires effort from all parties. This makes the interface and responsibilities of the various individuals and organizations more complicated than in manufacturing.
- The organizational structure of a construction company varies depending on the project, while the same structure in manufacturing company is almost unchanging. This affects the smoothness of responsible individuals.
- Turnover of manpower in construction is higher than in manufacturing, which affecting the precision of long-term plans.
- Construction projects are very complicated and their execution may take years.

3. IMPACT AND FACTORS AFFECTING TQM IN CONSTRUCTION INDUSTRY

In question 8 we asked to what extent your company's success depended on ISO 9000 certification. The results suggest that ISO 9000 played an important role (48%), it was not important for 18% of our respondents. The main reasons are related to quality improvement, marketing, corporate image and customer pressure. Here, service companies seem to be more motivated in terms of quality improvements and relations with authorities and relations with communities. Even though the last two elements are of less importance to service companies, these are significantly different to construction companies. Companies, on the other hand are different to services in their focus on marketing advantage customer pressure, avoid potential export barrier and major competitors certified. This suggests that construction company's experience more coercive pressures from their industry to become ISO 9000 certified that services do.

However the pressure does not seem to be very strong as all of these issues are somewhat important. Similar to service sector, construction companies are more motivated in terms of relations with authorities and relations with communities. Furthermore, construction companies report stronger reasons to get certified because of major competitors have already certification and because of cost reductions. Finally, software sector reports avoid potential export barrier as a much more dominant reason for ISO 9000 certification in comparison to other sectors.

3.1. Leadership Factors for Total Quality Management Modelling

The organisation development depends upon the coordination of different persons as a leader as well as an employ. It was observed that in ISO based company there is a proper system established for taking a decision. They have properly distributed right to the concern person & responsibility to handle the problems. As the responsibility are divided in proper way the loyality level of doing best is more in ISO based company it was seen to be 88% in ISO based company & 52% in Non ISO based company. Non ISO based company is either dragged by the single owner or multi owner but decision making power & responsibilities are measured to the authority of single headed. Here are been justice to the oriented & integrity is seen to be 92% in ISO based company & 36% in Non ISO based company.

As there are many people involved in ISO based company for different scenario of where this increases their challenge taking & patient by 80% that of Non ISO is just 56%. A whole team working with focused & systematic work the goal achieving percentage of ISO Company is 84% that of Non ISO based company is 44% as they are working under influence of respective owner.

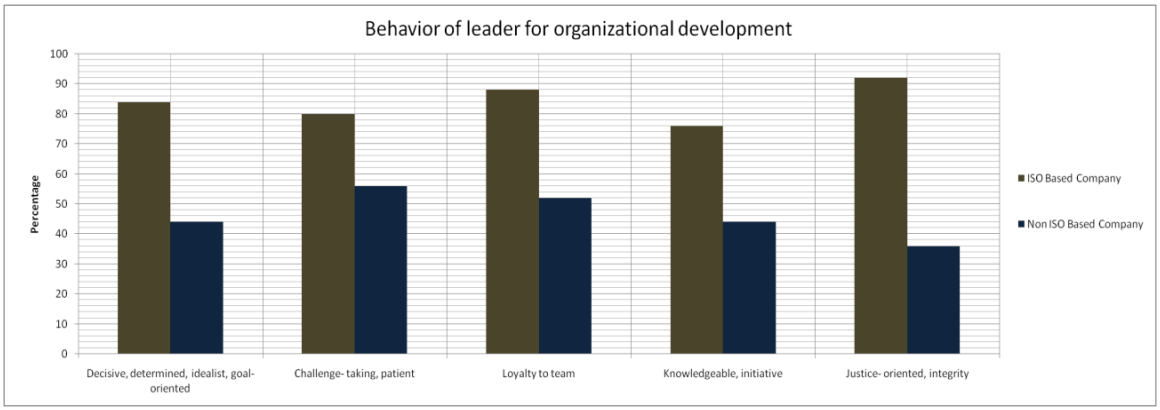

Figure No 2 Behavior of leader for organizational development

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Each company or organisation produces its own public impact. This depends on the policies of company or organisation & team working on the effectiveness of company & organisation which will affect the public sometimes directly or indirectly. This mainly is seen in Non ISO based company because it depends on thinking & ethics of owner alone. In ISO based company there are some people & some adviser so this risk of negative impact is seen as they are banded with some legal aspect of ethics of company or organisation.

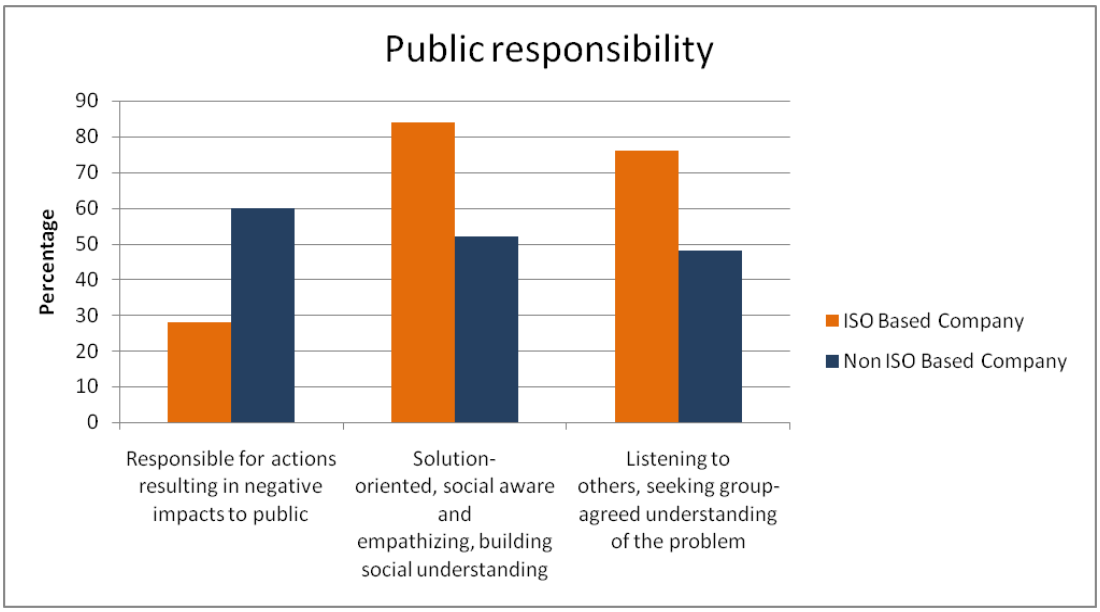

Figure No 3 Public responsibility

Importance of task management was seen to be 80% in ISO based company while in Non ISO based company it was 64% as Non ISO based company deal with just completion of work & they have lock of proper man power. In proper system of ISO based company people & task management activities can go hand in hand by 76% & in Non ISO based company there are lack of provisions for task management & hence it will consume 52% of total work. Task management & handling people at the spot is mainly based on the proper appointment of person for the proper work this is done in ISO based company by 84% & that of in Non ISO based company only 32% as they lack in expert opinions.

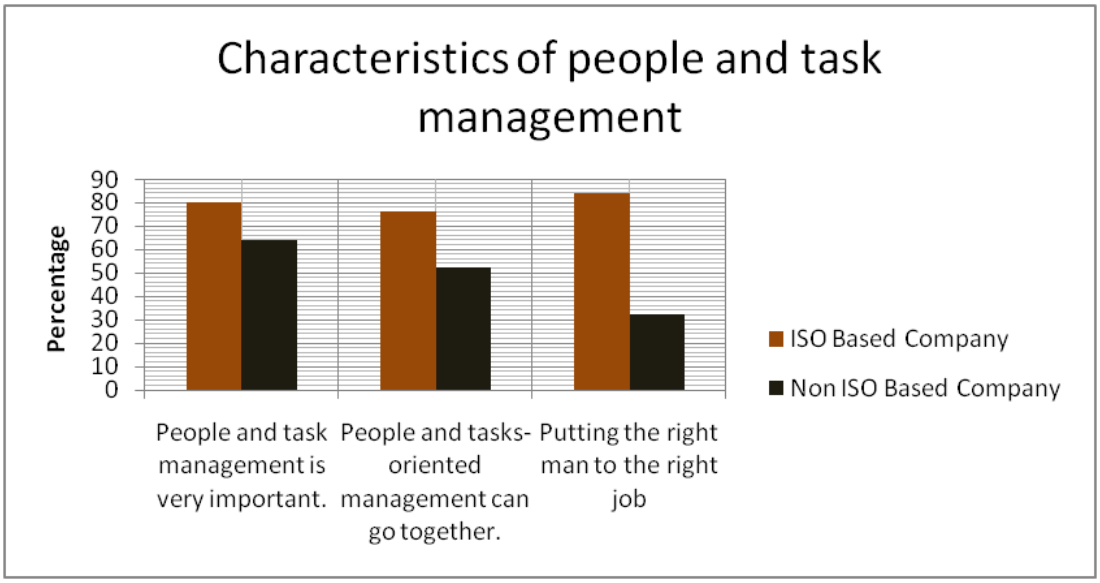

Figure No 4 Characteristics of people and task management

Leader characteristics affect the mass work in organisation. Proper leader qualities will help the organisation to grow. In ISO are have proper provisions of advisory & after commity of people. In ISO based company the decision power of leader is considered important as 72% than that of Non ISO based company is 64%. While bearing, consistency & considering own as part of work is considered 64% important in ISO based company as that 56% in Non ISO based company. The main qualities important 60% of leadership are determined achievement oriented &

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responsibility of mistake in ISO based company while in Non ISO based company it is 48% important.

Social impact leader will help the organisation to grow faster than other consideration this is important 76% in ISO based company & relatively 44% important in Non ISO based company. Experienced people are more important for a proper guidance it is 80% important in ISO based company while only 40% important in Non ISO based company.

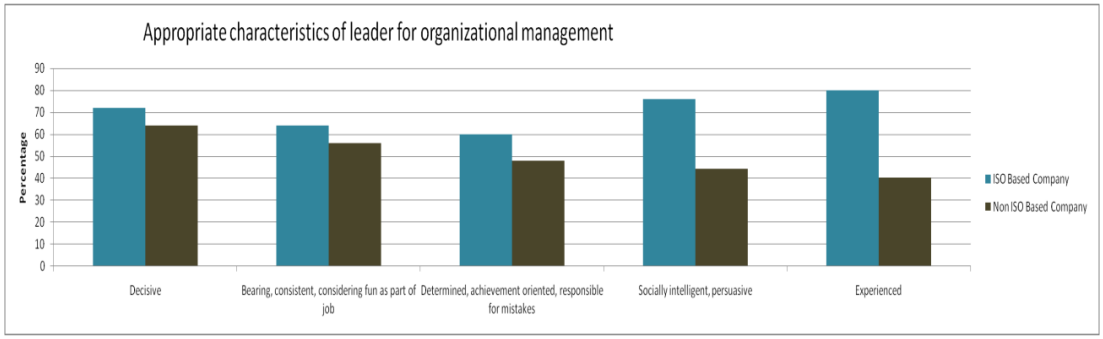

Figure No 5 Appropriate characteristics of leader for organizational management

3.2. Training Factors for Total Quality Management Modeling

Important of training gaining knowledge & understanding is given 80% by ISO based company. While than that of Non ISO is giving 68% importance. Training is also source of building new relations & connecting mass of people which is 76% important for ISO & 64% important for Non ISO. This refers to explore to new concepts & people around which helps in building & improving relations in different rector. Training gives a perspective towards problem handling which ultimately increases the self confidence of an individual towards handling things. This is important rated to be 88% in ISO Company & 46% in Non ISO. Melting different people around will automation explore to their personality & thinking which will explore the attitude of an individual towards problem solving. This is important 84% in ISO & 48% in ISO. Training is again important to be in touch with new technology & inventions which will reduce the time & budget working to solve the problem. This factor is important as considered 68% in ISO & 44% in Non ISO. Periodic training is important upto 64% respondents agree from ISO company & 44% from Non ISO.

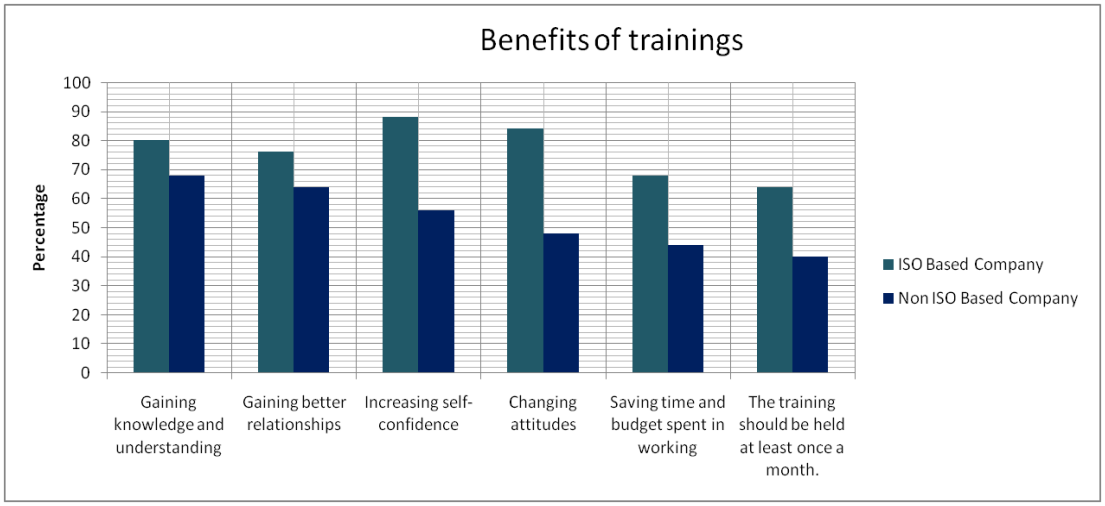

Figure No 6 Benefits of trainings

Type of training is based on the factor explained in whole process that may attract the same location or interested people in the organisation. The most important part is determine knowledge through a short program in which 52% of respondents agree from ISO & 64% from Non ISO for training through rarely activity. 88% respondents from ISO based & 68% of respondent from Non ISO based company relay on training by are of learning tools & people. while only 80% of respondent from ISO & 56% respondents from Non ISO agree on training by use of simulation.

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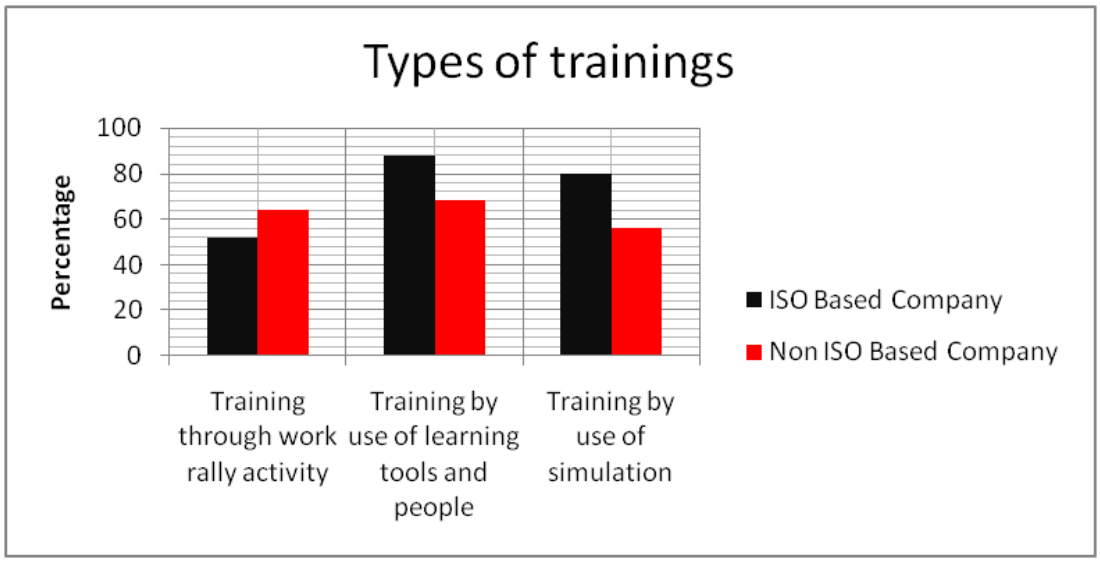

Figure No 7 Types of trainings

Evaluation of training work conducted will be based on how it is applicable to empower the organisation effectiveness & productivity are main goal behind conducting training program. One more basic function of training is exploring knowledge & new innovation. In terms of effectiveness importance of training 64% of responded from ISO & 60% respondents from Non ISO say it is important factor. Other most important factor is providing seminars & guest speaker in respective field for providing knowledge as it is rated 76% important from ISO & 44% important from Non ISO.

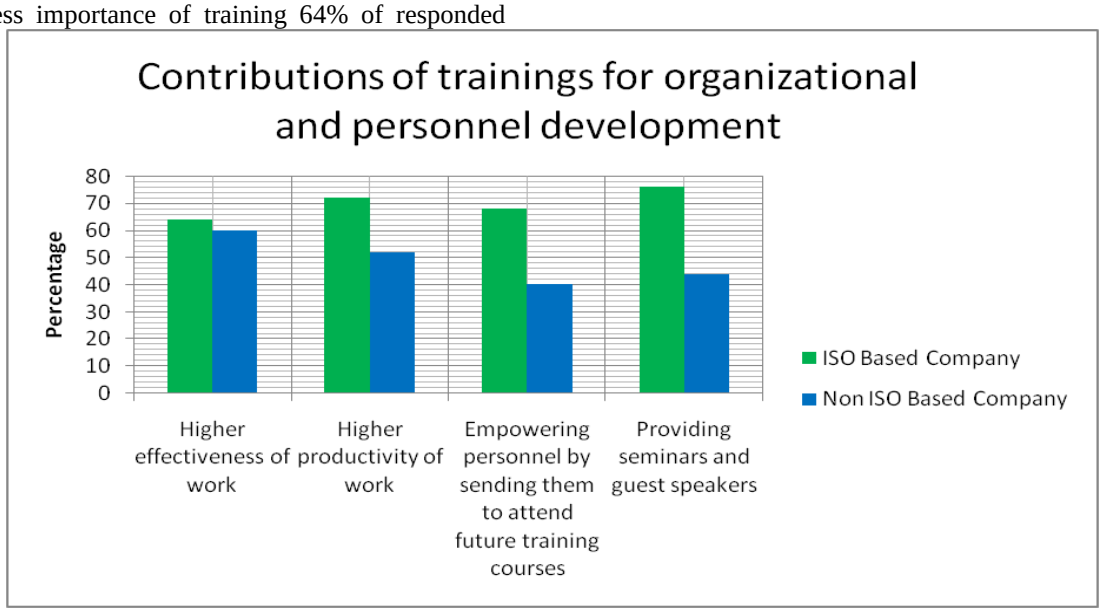

Figure No 8 Contributions of trainings for organizational and personnel development

3.3. Organizational Structure Factors for Total Quality Management Modelling

Organisation survey was done to find the factors related to organisation structure affecting TQM. It was seen that services provided by on organisation impact 60% on ISO & 56% an Non ISO based company. Structure is related to whole working & managing bodies on an organisation which affects 68% in ISO based company & 44% in Non ISO. One more disadvantage of inadequate number of staff affect 76% in ISO & 36% in Non ISO based company.

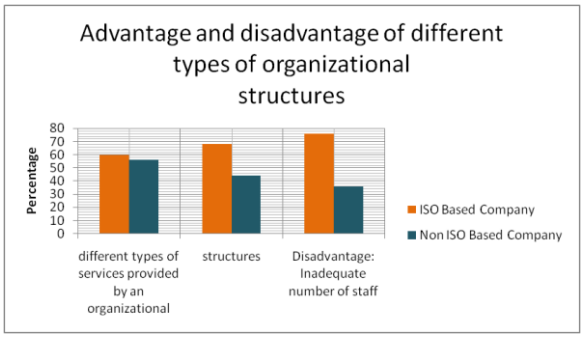

Figure No 9 Advantage and disadvantage of different types of organizational structures

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Appropriateness depends on the managing persons accuracy, this is seen to be important by 72% in ISO & 48% in Non ISO company. The ISO based company is bonded to provide a qualitative product & with in time specified this improves the pressure on managing team for accuracy which will indirectly lead to the appropriateness.

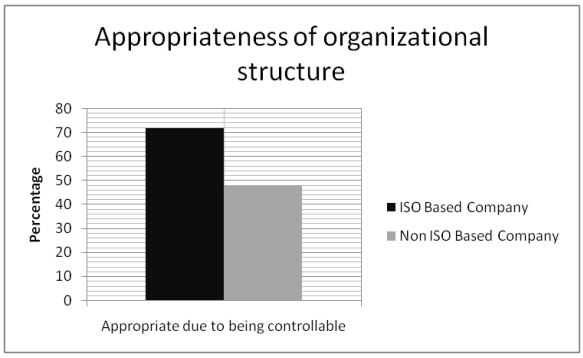

Figure No 10 Appropriateness of organizational structure

Structure or group of members working together will affect the whole system of work. This factor is considered in terms of higher grade of delivering public services & accessibility which will help in building reported organisation. This is important as 56% in ISO & 44% in Non ISO based company.

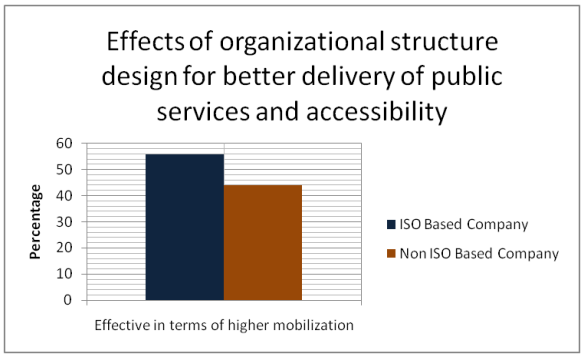

Figure No 11 Effects of organizational structure design for better delivery of public services and accessibility

Depending on ISO & Non ISO there function play role in whole organisation. In ISO high services quality is 68% important effective communication is 76% important & putting the right man at work is 72% important while in Non ISO high service quality is 56% important, effective communication is 36% important & putting the right man to work is 60% important. The level of difference of organizational important differs in the product output of ISO & Non ISO Company.

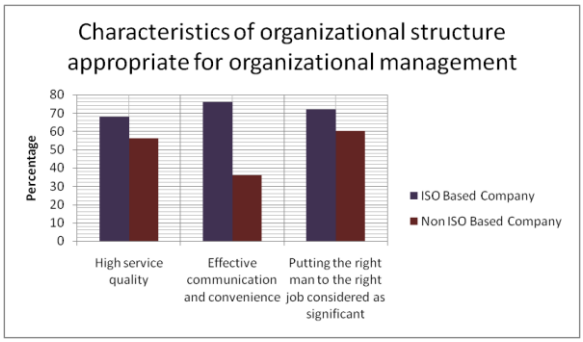

Figure No 12 Characteristics of organizational structure appropriate for organizational management

Quality of the different construction depends on site situation which is again an important factor for ISO Company as 72% & FOR Non ISO it is 52% important this shows ISO company does not compromise on quality due to bad situations. Secondly adjustment due to changing of authority is done both in ISO as well as Non ISO this will affect the important by 76% in ISO & 44% in Non ISO.

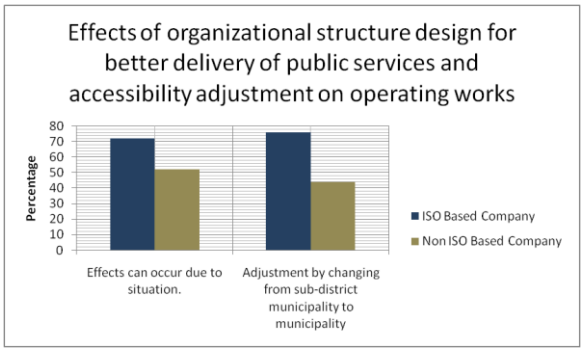

Figure No 13 Effects of organizational structure design for better delivery of public services and accessibility adjustment on operating works

3.4. Communication Factors for Total Quality Management Modeling

Significance of communication directly affects the execution in construction industry. Daily report of operation completed is 72% important in ISO & 56% important in Non ISO. The significance of driving task to achieve objectives 68% in ISO & 44% in Non ISO this means in Non ISO based company objective driven work are not promoted but completion of work any way is important. In Non ISO based company supporting or helping organisation does not show interact in solving problem but that in ISO Company helping organisations supports as ISO based maintains professional relations with helping organisation. These in ISO 84% important is helping organisation while in Non ISO it is 48%. Service providing is other important factor affecting TQM thus 72% providing service is important in ISO & 40% in Non ISO. Success of organisation is important 96% in ISO & 32% in Non ISO they are bonded to improve the reputation company as forward.

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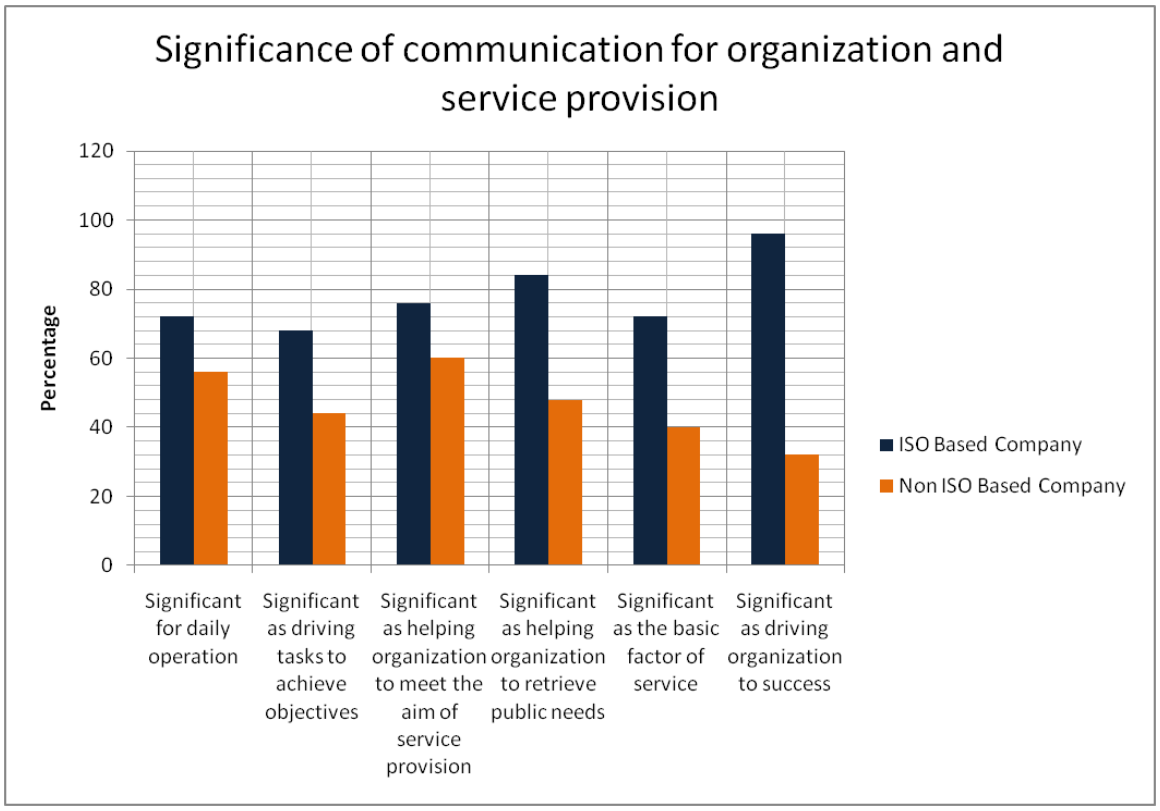

Figure No 14 Significance of communication for organization and service provision

The communication gap between the employs & leader, leader & owner & owner to customer is an link & connection problem there are affected with time & indiscipline in work main reasons are ambiguous documents which affect 44% in ISO based & 84% in Non ISO secondly communication red tape affects 48% in ISO based company & 88% in Non ISO while some problems are solved easily in ISO based company with reference to same.

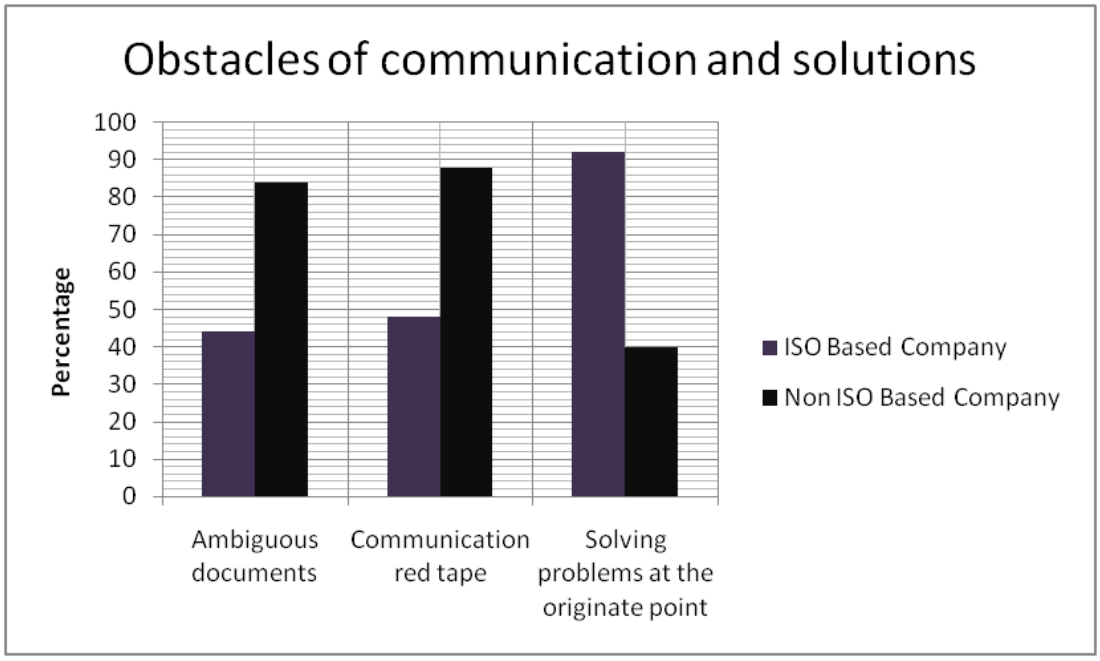

Figure No 15 Obstacles of communication and solutions

Intra communication is one of the main factor to drive work of construction smoothly this helps in grooming new fresh member & connecting the whole chain of work. This is dependent of some basic factors are open minded people & better communication tools with transparency system. The factor of open oriented people affects 84% in ISO & 82% in

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Non ISO while body language & facial expression affects 76% in ISO & 56% in Non ISO. Using communication tools is affecting 88% in ISO & 60% in Non ISO while using communication technology affect 92% in ISO & 68% in Non ISO.

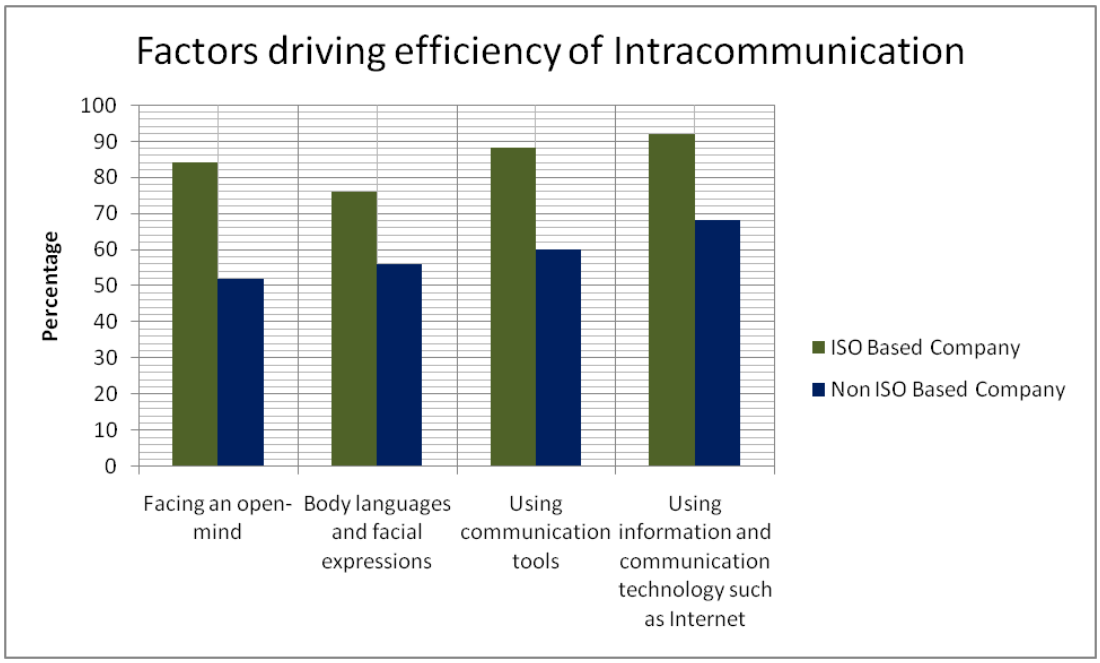

Figure No 16 Factors driving efficiency of Intracommunication

3.5. Incentives Factors for Total Quality Management Modeling

Incentives program encourage the staff to work in proper direction & earn benefit for the company or organisation main important qualities are honestly which is important 68% for ISO & 52% Non ISO secondly hard working & patient is important 84% in ISO & 48% in Non ISO. The difference in ISO & Non ISO is basically ISO follows a system of up gradation of knowledge & updated systems to solve problem & improve the quality of the work. Loyality towards organisation & high responsibility are other two important things in incentives management so as compared it is 76% to 92% important in ISO & 52 to 56% important in Non ISO.

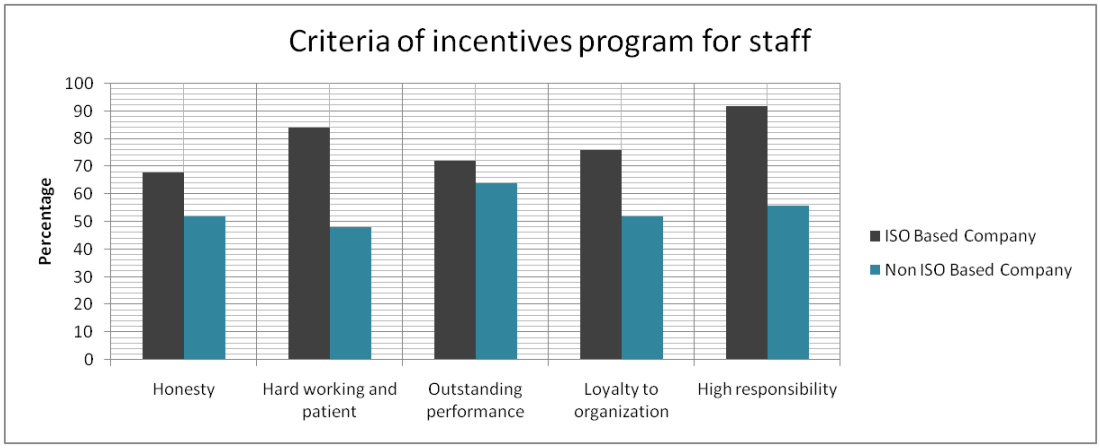

Figure No 17 Criteria of incentives program for staff

Building a good staff valves & periodically motivating them to enhance their ability is important for an organisation to grow. This is done by given importance in motivating term for achievement oriented behaviour. Higher attention to duties & higher involvement thus it was seen ISO based company is taking more initiative in building & motivating their staff for more effective work than an Non ISO based company. According to survey it was seen 76% of ISO & 56% of Non ISO are interested in motivating staff towards achievement oriented behaviour while 84% of ISO & 60% of Non ISO are interested in motivating staff towards higher attention to duties, motivation towards higher involvements was seen to be 68% In ISO & 56% in Non ISO. Building a positive environment in the company or organisation is more important for the entire organisation to work effectively & grow with time this was referred more by ISO based company & less by Non ISO.

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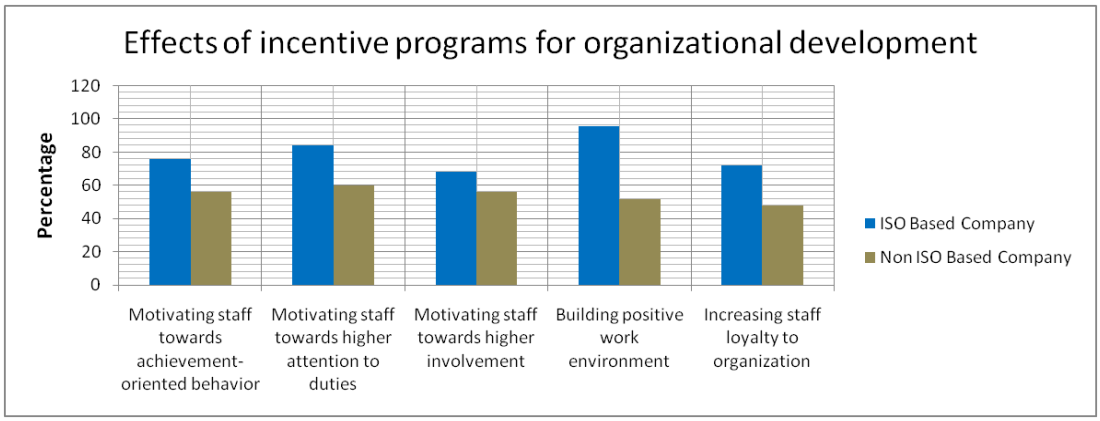

Figure No 18 Effects of incentive programs for organizational development

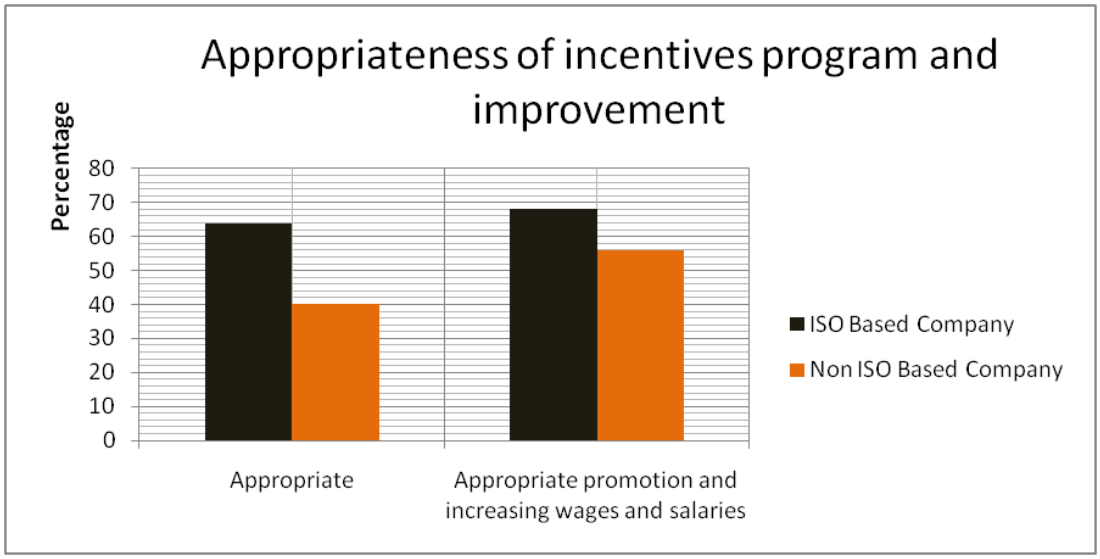

Figure No 19 Appropriateness of incentives program and improvement

Incentric & extric rewards are important to increase the self confidence of the employ to allow them working more efficiently & with their own freedom, this is done by rewarding them time to time with emotional or extrinsic rewards. Stability & security always maters to the employ more than what they do for the organisation this was seen in survey rewards are important about 76% in ISO & 56% in Non ISO.

Figure No 20 Intrinsic and extrinsic rewards: which one is more effective in motivating and encouraging staff at work

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3.6. Measurement and Evaluation Factors for Total Quality Management Modeling

Evaluation helps in predetermining the defects in system which helps in improving quality of output product with different aspects. This also have some function that affects evaluation of organisation. These are the one which affects the evaluation of the organisation important in evaluation was seen more of ISO company than in Non ISO company deficiency in measurement & evaluation was seen to be 65% in ISO & 60% in Non ISO evaluation pre & post was seen 90% in ISO & 70% in Non ISO measurement of individual evaluation was seen 85% in ISO & 50% in Non ISO.

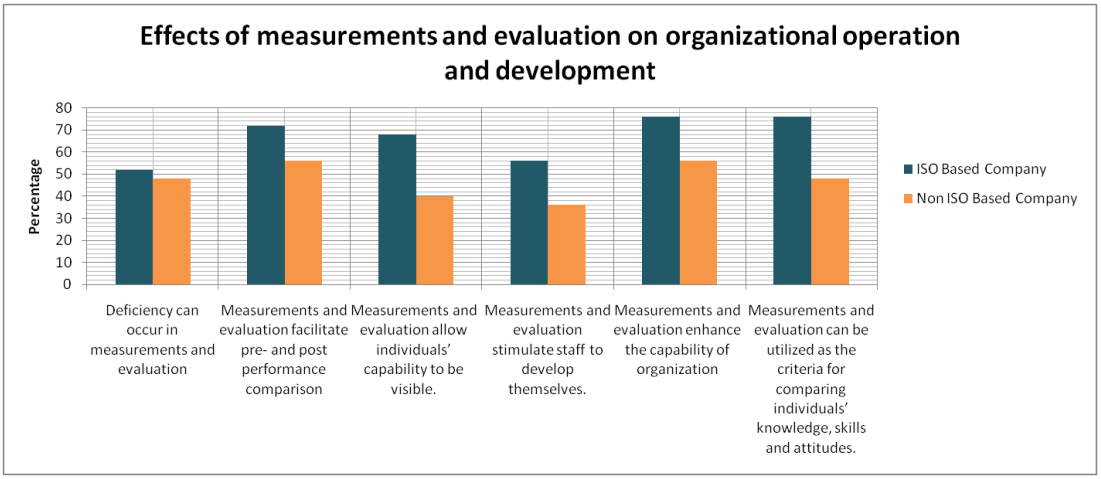

Figure No 21 Effects of measurements and evaluation on organizational operation and development

Non profit & public services organisation are new form of modern measurement & evaluation this helps the modernization of the institute of organisation. It was seen 56 to 68% importance in ISO & 48 to 44% in Non ISO.

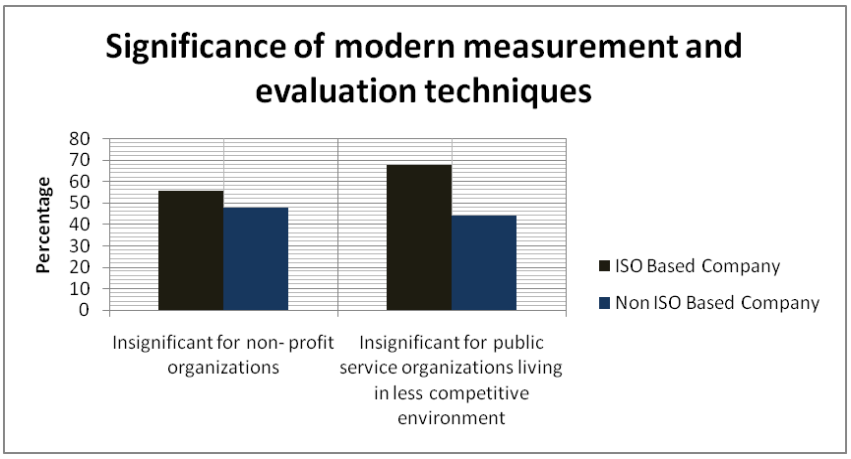

Figure No 22 Significance of modern measurement and evaluation techniques

Measurement of quality is mainly based on accordance of any system of execution the work. This helps 76% in ISO system organisation while 48% in Non ISO system organisation.

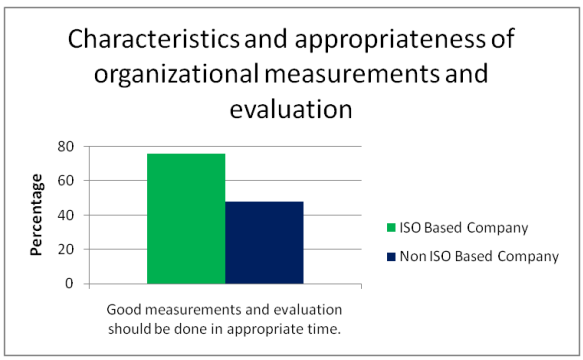

Figure No 23 Characteristics and appropriateness of organizational measurements and evaluation

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4. CONCLUSION

The implementation of the quality management system (QMS) is an important milestone for any construction company. Sustainable development of the company and its competitiveness are directly dependent on the proper functioning of the QMS. Certification of Quality Management System according to ISO 9001 can help to maintain a long trusting relationship with consumers. The purpose of this study is consideration of the basic QMS implementation problems and choosing the certification body. The results of the study show that there is a lot of suggestions about how to obtain a certificate of quality, but there is no algorithm of actions for the implementation of the system design companies in the construction industry. It is therefore necessary to develop guidelines for the implementation of QMS, previously classified construction companies and determine the main parameters of the choice of certification bodies.

Certification is not a mandatory step in the implementation of the QMS. There are special organizations to conduct audits of the QMS, they issue a certificate of compliance QMS standard. But not all organizations have the same authority in a variety of industries and territories. The quality management system needs to be developed in our country. ISO 9001:2015 aims to create a management system, therefore, the QMS may improve competitiveness in the global market. And therefore further demand for certification will increase. There are many articles on the topic of the quality management system, there are many suggestions in obtaining quality certificates, but there is no single methodological guide for its implementation, that take into account typical characteristics of construction organizations. To develop methodological recommendations it is necessary to conduct classification of certifiers, certification systems and the companies themselves that are implementing the QMS, which, of course, are specific to the economic environment of the India.

- ISO 9000 can prove to be a great method of building a quality track record that will stand up under the closest scrutiny, even in the most competitive construction environments. It enables all types of construction professionals--from architects and engineers to contractors and suppliers--to develop quality standards and procedures precisely suited to their particular needs and responsibilities. It offers step-by-step instructions on the implementation and management of an ISO 9000 quality assurance system and demonstrates how the system puts the quality-management process into effect before work begins and detects and corrects problems before they reach disastrous proportions.

- In this research we aimed to map fingerprint characteristics of NZ ISO 9000 certified companies. We contacted 1774 companies with ISO 9000 certification and asked them about their motivations and benefits gained through the adoption of the ISO 9000 standard. Data collected through 472 responses suggest that NZ ISO 9000 certified companies are motivated to get ISO 9000 certification because of improved quality, marketing benefits and improved corporate image. The benefits gained after the ISO 9000 certification seem to be largely of internal nature such as improved internal procedures and improved quality.

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